

Fact Sheet — Energy Supply & Use Indicator

The Energy Present

Physical Realities

- The regional power grid supplies the electricity used on Cape Cod, Martha's Vineyard, and Nantucket. Heating and transportation fuels arrive by pipeline, barge, and truck.
- The power grid is relatively simple—transmission lines crossing the Cape Cod Canal connect Cape Cod communities, as well as those on the Islands, to the mainland New England grid. The electrons generated by the 1120-megawatt (MW) Canal Station in Sandwich feed into the grid at a substation in Bourne.
- In 2002, average electricity demand by consumers in Cape Cod, Nantucket, and Martha's Vineyard was about 230 MW.
- Because electricity flows according to the laws of physics, the electrons consumed within a specific area are those generated by the nearest sources. Accordingly, nearly 100% of the electrons consumed in the Cape & Islands region are produced by the Canal Station.



The Canal Station burns fuel oil to supply most of the electricity consumed in the Cape & Islands region. (credit: Mirant)

Adverse Emissions

- Air quality, water quality, and ecological and human health in the Cape & Islands are adversely impacted by nitrogen and sulfur oxides (NO_x and SO_x) and other combustion-related pollutants emitted by local, regional, and national sources. Sources include automobiles, boats, furnaces, power plants, and all other systems powered by fossil fuels.
- The Cape & Islands region is particularly susceptible to global climate change induced by the rising atmospheric concentrations of carbon dioxide (CO₂) and other greenhouse gases. Federal and state agencies have identified local vulnerabilities spanning economic, environmental, and social dimensions, including coastal properties, tourism, fisheries, water supplies, and public health.
- For each hour of every day in 2002, average electricity demand by Cape & Islands consumers accounted for the release of more than 3000 lbs of SO₂ and NO_x emissions, as well as more than 200 tons of CO₂ emissions, from the Canal Station.

Purchasing Power

- Rates for electricity, natural gas, oil, gasoline, and other energy commodities are generally higher in the Cape & Islands region than elsewhere in Massachusetts and throughout most of New England.
- In the restructured electricity marketplace, Massachusetts consumers may elect to purchase power from a competitive supplier. The opportunities to reduce costs and procure green power promised by industry deregulation have remained largely elusive.
- Until a fully competitive marketplace develops, “default” consumers remain particularly vulnerable to high electricity prices. By March 2005, all consumers who have not chosen a competitive supplier will receive default service.
- The Cape Light Compact reduces electricity costs by leveraging the buying power of ratepayers in communities on Cape Cod and Martha's Vineyard. The Compact has negotiated power supply agreements for local default consumers that have produced savings totaling in the millions of dollars.
- Many Cape & Islands consumers have indicated a willingness to pay premium prices for electricity from renewable sources, but green power purchase options are not yet available from the Compact.

The facts presented above are abstracted from the 2003 Cape Cod Sustainability Indicators Report, available at www.sustaincapecod.org. For more information contact Chris Powicki, participant in the Cape & Islands Renewable Energy Collaborative and principal of Water Energy & Ecology Information Services, chrisp@weeinfo.com, 508.362.9599.